Appl. No. 09/826,440
Response to March 09, 2004 Non-Final Office action

AMENDMENTS TO THE CLAIMS

Claims 1-44 were originally pending.

Please amend claims 8-11, 13, 15, 24, 25, 28, 29, 35-38, 40, 41, and 44.

Please cancel claims 1-7, 12, 14, 18-23, 26, 27, 34, and 39 without prejudice.

No claims are added.

Accordingly, claims 8-11, 13, 15-17, 24-25, 28-33, 35-38, and 40-44 remain

pending.

The following listing of claims replaces all prior versions, and listings of claims in

the application.

Listing of Claims:

1 – 7. (Canceled).

8.   (Currently amended) A method as recited in claim 13 7, wherein the

one or more objects are photographs.

9.   (Currently amended) A method as recited in claim 13 7, wherein the

one or more objects are rectangular in shape.

10.   (Currently amended) A method as recited in claim 13 7, further

comprising segmenting the one or more objects based on the set of boundaries.

Appl. No. 09/826,440
Response to March 09, 2004 Non-Final Office action

11. (Currently amended) A method as recited in claim 13 7, ~~wherein the edge map comprises an array of elements, each element representing a respective pixel of the image data; and~~ wherein the generating further comprises:

estimating a background color of a scanner lid;

for each pixel of at least one subset of the image data:

identifying an absolute difference between a value of a current pixel and the background color; and

if the absolute difference is greater than a predetermined threshold, indicating that a corresponding array element represents a pixel of the at least one subset of image data that belongs to an edge.

12. (Canceled).

Appl. No. 09/826,440
Response to March 09, 2004 Non-Final Office action

13.   (Currently amended) A method ~~as recited in claim 12,~~ for detecting one or more objects in image data, the method comprising:

generating an edge map from the image data, the edge map comprising an array of elements, each element representing a respective pixel of the image data;

analyzing the edge map to determine a plurality of boundaries of the one or more objects by:

(a) transforming the array of elements to produce a set of domain peaks, each domain peak corresponding to a straight line of a set of straight lines, and

(b) determining which of the straight lines belong to the set of boundaries based on a set of rules, the set of rules:

• identifying a boundary set that indicates an object at a distinct angle as compared to an orientation of a previously found object;

• identifying a boundary set that indicates an object having a same dimension as a previously found object; and

• identifying pairs of parallel and perpendicular boundaries that indicate an object that satisfies a substantially non-background interior condition with a previously found object.

14.   (Canceled)

Appl. No. 09/826,440
Response to March 09, 2004 Non-Final Office action

15.   (Currently amended) A method as recited in claim 7 for detecting one or more objects in image data, the computing device comprising:

wherein the edge map comprises an array of elements, each element representing a respective pixel of the image data;

wherein the analyzing further comprises:

generating an edge map from the image data, the edge map comprising an array of elements, each element representing a respective pixel of the image data; and

analyzing the edge map to determine a plurality of boundaries of the one or more objects by:

(a) transforming the array elements to produce a set of domain peaks, each domain peak corresponding to a straight line of a set of straight lines; and

(b) determining which of the straight lines belong to the set of boundaries based on a set of rules, the set of rules comprising rules that are directed to:

identifying a first object with a first dimension; and

seeking a same sized object with a second dimension that corresponds to the first dimension dimension.

Appl. No. 09/826,440
Response to March 09, 2004 Non-Final Office action

16. (Unchanged) A method as recited by claim 15, wherein the identifying comprises:

determining a background color;

determining a candidate object; and

if an interior portion of the candidate object is not consistent with the background color, concluding that the candidate object is the first object.

17. (Unchanged) A method as recited in claim 15, wherein a line of the straight lines corresponds to a candidate object, the seeking further comprising:

detecting a first image to background transition that corresponds to the first image, and a second image to background transition that corresponds to the line; and

if the first image to background transition does not coincide with the second image to background transition, assigning the line to be a boundary of a different object.

18-23. (Canceled).

Appl. No. 09/826,440
Response to March 09, 2004 Non-Final Office action

24.   (Currently amended) A method as recited in claim 19, for detecting whether image data represents more than one object, the method comprising:

determining a background color of a scanner lid;

identifying a set of transitions between the background color and other colors that correspond to the image according to the following:

(a) for each row(i) of image data:

● calculating a left(i) transition from background data to image data;

● calculating a right(i) transition from image data to background data; and

● determining a difference(i) between right(i) transition and left(i) transition;

(b) for each column(j) of image data:

● calculating a top(j) transition from background data to image data;

● calculating a bottom(j) transition from image data to background data;

● determine determining a difference(j) between bottom(j) transition and top(j) transition;

● generating a first histogram from each difference(i);

● generating a second histogram from each difference(j); and

● using a set of characteristics that are displayed by the first and second histograms display to determine whether the image data represents one objects or more than one object;

Appl. No. 09/826,440
Response to March 09, 2004 Non-Final Office action

analyzing the set of transitions to detect a set of image data characteristics; and

estimating based on a set of one or more rules, a number of objects based on the set of image data characteristics.

Appl. No. 09/826,440
Response to March 09, 2004 Non-Final Office action

25.   (Currently amended) A ~~method as recited in claim 19, further comprising:~~ computer-readable medium comprising computer-program instructions executable by a processor for detecting whether image data represents more than one object, the computer-program instructions comprising instructions for:

determining a background color of a scanner lid;

identifying a set of transitions between the background color and other colors that correspond to the image data; and

analyzing the set of transitions to detect a set of image data characteristics;

estimating based on a set of one or more rules, a number of objects based on the set of image data characteristics;

generating a first histogram representing horizontal transitions from the transitions;

generating a second histogram representing vertical transitions from the transitions;

the first and second histograms displaying a set of peaks that identify whether the image data comprises more than one object; and

the set of rules comprising the following rules:

(a) if the set of peaks comprises only a single peak, classifying the image data as containing only a single object;

(b) if the set of peaks comprises only two peaks, classifying the image data as containing multiple objects;

(c) classifying the image data as comprising multiple objects if there is a gap in either the first histogram or the second histogram; and

Appl. No. 09/826,440
Response to March 09, 2004 Non-Final Office action

(d) if neither (a), (b), or (c) apply, classifying the image data as comprising multiple objects.

26 - 27.   (Canceled).

28.   (Currently amended) A device as recited in claim 29 ~~27~~, wherein the analyzing further comprises taking a Hough transform of the edge map to determine the set of boundaries.

Appl. No. 09/826,440
Response to March 09, 2004 Non-Final Office action

29.   A device as recited in claim 27, wherein the analyzing further comprises: for detecting multiple objects in image data, the device comprising:

a processor; and

a memory coupled to the processor, the memory comprising computer program instructions executable by the processor for:

generating an edge map from the image data;

analyzing the edge map to determine a set of boundaries of the one or more objects by:

(a) determining a set of transitions between the set of boundaries and a background color;

(b) identifying a set of characteristics from the set of transitions, the set of characteristics being used to indicate whether the image data comprises a single object or whether the image data comprises a plurality of objects; and

(c) if the image data corresponds to a plurality of objects, assigning particular ones of the set of boundaries to particular ones of the plurality of objects based on a set of rules. rules; and

segmenting the one or more objects based on the set of boundaries.

Appl. No. 09/826,440
Response to March 09, 2004 Non-Final Office action

30.   (Unchanged) A device as recited in claim 29, wherein the set of rules comprises rules that are directed to:

determining a background color of a scanner lid;

determining a candidate object;

determining that the candidate object is a first object, the first object having a first dimension if an interior portion of the candidate object is not consistent with the background color; and

seeking a same sized object with a second dimension that corresponds to the first dimension.

Appl. No. 09/826,440
Response to March 09, 2004 Non-Final Office action

31.   (Unchanged) A device as recited in claim 29, wherein the set of rules comprises rules that are directed to:

determining a background color of a scanner lid;

determining a first candidate object;

if an interior portion of the first candidate object is not consistent with the background color, determining that the first candidate object is a first object, the first object having a first dimension; and

seeking a same sized object with a second dimension that corresponds to the first dimension, the seeking comprising:

identifying a boundary of the set of boundaries that corresponds to a second candidate object;

detecting a first image to background transition that corresponds to the first object, and a second image to background transition that corresponds to the boundary; and

if the first image to background transition does not coincide with the second image to background transition, assigning the boundary to the same sized object.

Appl. No. 09/826,440
Response to March 09, 2004 Non-Final Office action

32.   (Unchanged) A device as recited in claim 29, wherein the identifying further comprises:

for each row(i) of image data:

calculating a left(i) transition from background data to image data;

calculating a right(i) transition from image data to background data;

determine a difference(i) between right(i) transition and left(i) transition;

for each column(j) of image data:

calculating a top(j) transition from background data to image data;

calculating a bottom(j) transition from image data to background data;

determine a difference(j) between bottom(j) transition and top(i) transition;

generating a first histogram from each difference(i);

generating a second histogram from each difference(j); and

wherein the first and second histograms display the set of characteristics.

Appl. No. 09/826,440
Response to March 09, 2004 Non-Final Office action

33. (Unchanged) A device as recited in claim 29, wherein the set of rules is a first set of rules, and wherein the set of characteristics indicate a set of peaks that are used to identify whether the image data comprises a single object or a plurality of objects based on a second set of rules, the second set of rules comprising rules that are directed to:

(a) if the set of peaks comprises only a single peak, classifying the image data as containing only a single object;

(b) if the set of peaks comprises only two peaks, classifying the image data as containing a plurality of objects;

(c) if there is a gap in either the first histogram or the second histogram, then classifying the image data as comprising containing a plurality of objects; and

(d) if neither (a), (b), or (c) apply, classifying the image data as comprising containing a plurality of objects.

34. (Canceled)

35. (Currently amended) A computer readable storage medium as recited in claim 41 34, wherein the one or more objects are photographs.

36. (Currently amended) A computer readable storage medium as recited in claim 41 34, wherein the one or more objects are rectangular in shape.

37. (Currently amended) A computer readable storage medium as recited in claim 41 34, wherein the program module further performs acts comprising segmenting the one or more objects based on the set of boundaries.

Appl. No. 09/826,440
Response to March 09, 2004 Non-Final Office action

38.   (Currently amended) A computer readable storage medium as recited in claim 41 34, wherein the edge map comprises an array of elements, each element representing a respective pixel of the image data; and

wherein the generating further comprises:

estimating a background color of a scanner lid;

for each pixel of the image data:

identifying an absolute difference between a value of the pixel and the background color; and

if the absolute difference is greater than a predetermined threshold, indicating that a corresponding array element represents a pixel of the image data that belongs to an edge.

39.   (Canceled).

40.   (Currently amended) A computer readable storage medium as recited in claim 41 39, wherein the transforming further comprises taking a Hough transform of the array of elements to produce the set of domain peaks.

41.   (Currently amended) A computer readable storage medium as recited in claim 34, wherein the analyzing further comprises: comprising a program module for detecting multiple objects in image data, wherein the program module performs acts comprising:

Appl. No. 09/826,440
Response to March 09, 2004 Non-Final Office action

generating an edge map from the image data; the edge map including an array of elements, each element representing a respective pixel of the image data; and

analyzing the edge map to determine a set of boundaries of the one or more objects by:

transforming the array elements to produce a set of domain peaks, each domain peak corresponding to a straight line of a set of straight lines; and

determining which of the straight lines belong to the set of boundaries based on a set of rules, the set of rules comprising rules that are directed to:

identifying a first object with a first dimension; and

seeking a same sized object with a second dimension that corresponds to the first dimension.

42.   (Unchanged) A computer readable storage medium as recited in claim 41, wherein the identifying comprises:

determining a background color of a scanner lid;

determining a candidate object; and

if an interior portion of the candidate object is not consistent with the background color, concluding that the candidate object is the first object.

43.   (Unchanged) A computer readable storage medium as recited in claim 41, wherein a line of the straight lines corresponds to a candidate object, the seeking further comprising:

Appl. No. 09/826,440
Response to March 09, 2004 Non-Final Office action

detecting a first image to background transition that corresponds to the first

image, and a second image to background transition that corresponds to the line;

and

if the first image to background transition does not coincide with the second

image to background transition, assigning the line to be a boundary of a different

object.

44.   (Currently amended) A computer comprising one or more computer-

readable media as recited in claim 41 34.

LEE & HAYES, PLLC   Page 19 of 20   MS1-719US.M01

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